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MXA214
MXA224
MXA234
MXA244
MXA254
MXA284
MXA414
MXA1600
MXA3000D

A M E R I C A N C R A F T E D P E R F O R M A N C E

Owner's Manual www.lanzar.com

congratulations...

Congratulations on your purchase of an LanzaR MAX series amplifier. You have purchased a quality product designed and engineered to give you many years of uncompromised musical service. American series amplifiers are designed with the latest technology available, which provides headroom for even the most demanding peaks and dynamic ranges found on modern CD's and recordings.

The LanzaR logo is rendered in a large, light gray, cursive script font. The letter 'L' is particularly large and stylized, with a long, sweeping tail that extends to the left. The rest of the word 'anzaR' follows in a similar cursive style, with the 'R' having a small, curled end.

table of contents

features and specifications MXA1600/MXA3000D MXA214/MXA224/MXA234 MXA244/MXA254/MXA284 MXA414	2-9	high level input connections MXA414	17
electrical connections MXA1600/MXA3000D MXA214/MXA224/MXA234 MXA244/MXA254/MXA284 MXA414	10-11	system wiring speaker connections MXA214/MXA224/MXA234 MXA244/MXA254/MXA284	18
mono/mono input connections MXA214/MXA224/MXA234 MXA244/MXA254/MXA284	12-15	mono input connections MXA414	19
2/4 channel input connections MXA414	16	speaker connections MXA414	20-21
		speaker wiring MXA1600/MXA3000D	22
		mounting and installation	23
		protection circuitry and troubleshooting	24
		precautions	25

features and specifications

MONO BLOCK AMPLIFIER MXA1600 • MXA3000D

- power supplies** Stiffly regulated PWM power supplies. MOSFET switches maintain rated power over a wide range of battery voltages.
- sub sonic control** When the sub sonic selector switch is in "ON" mode, this filter control permits continuously variable adjustment from 10 to 100Hz.
- bass boost level control** This control permits adjustment of the bass level up to an increase of approximately up to 18dB.
- crossover low pass filter** Adjustable from 40Hz to 250Hz with a slope of 24dB per octave. This allows for the adjustment of the upper point of the frequency bandwidth and the respective subwoofer.
- protection circuitry** Protection against thermal, overload and short circuit conditions.
- phase shift switch** Allows you to change the phase of your subwoofer from 0 degree to 180 degrees to help compensate from timing difference between drivers.
- AUX line outputs** This amp features RCA jacks for AUX line outputs. Use these outputs. Use these for unlimited system expansion to the next MAX.
- power LED** This indicator is illuminated in GREEN when power is applied.
- protection LED** This indicator is illuminated in RED when the built-in protection circuitry is activated.
- power fuse** The fuse protects the amplifier and your car's electrical system from short circuit conditions.
- power terminals** Use these connectors to deliver power, ground, and remote turn-on control to the amplifier.
- speaker connectors** These terminals are to guarantee high conductivity and minimum signal loss.

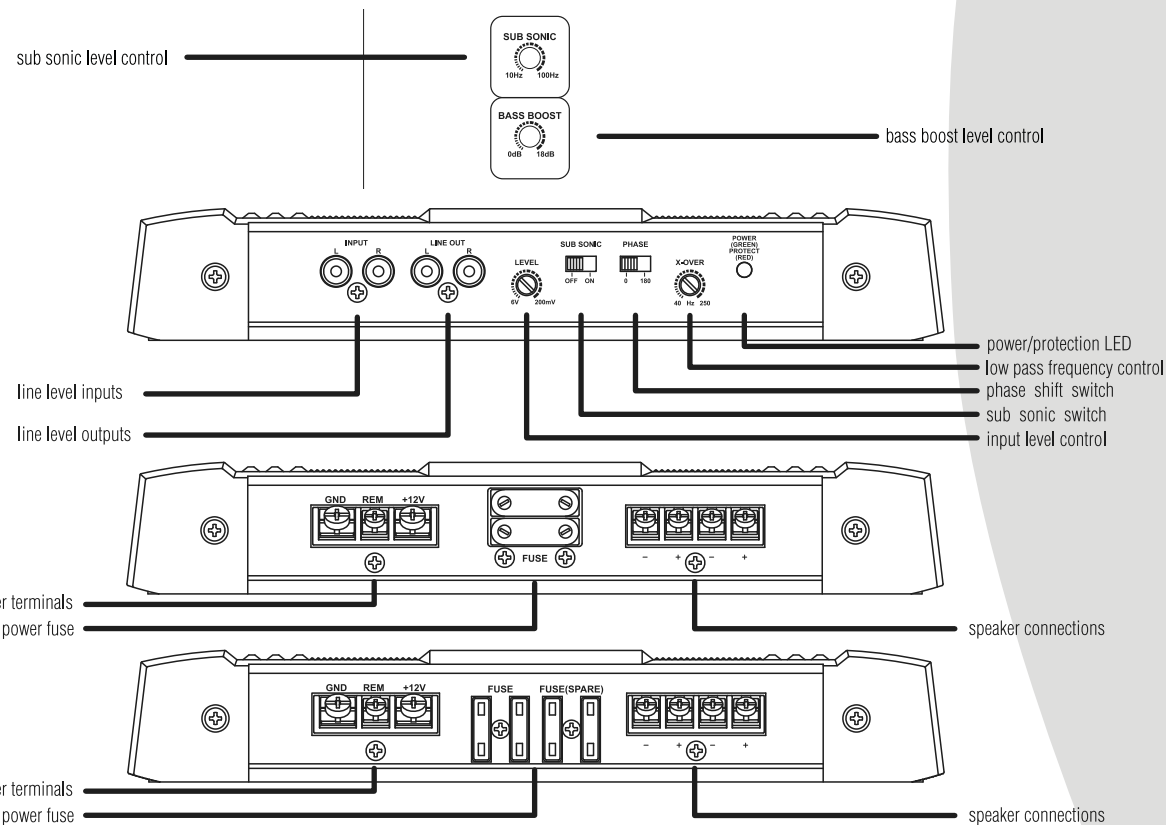
output power @ 14.4v DC, 50Hz	MXA1600	MXA3000D
RMS Power at @ 4 Ohms	175W MONO	250W MONO
RMS Power at @ 2 Ohms	275W MONO	385W MONO
Maximum Power Output	2000W MONO	3000W MONO

frequency response	— 20 Hz-250 Hz (±3dB) —
input impedance	— 10K Ohms —
input sensitivity	— 200mV~6V Adjustable —
power supply voltage	14.4V DC Neg. Ground (10.5-16V)
min speaker impedance	2-4 Ohms 1-4 Ohms
T.H.D	— 0.1% —
S/N ration	— >90dB —
cross filter	— 40Hz-250Hz —
bass boost	— 0 ~ +18dB —
sub sonic filter	— 10~100Hz —

fuse	40A	25A
dimensions (W x H x L)		
mm	270 x 43.5 x 305	270 x 43.5 x 330
inches	10.63 x 1.71 x 12	10.63 x 1.71 x 13

features and controls

MONO BLOCK AMPLIFIER MXA1600 • MXA3000D



features and specifications

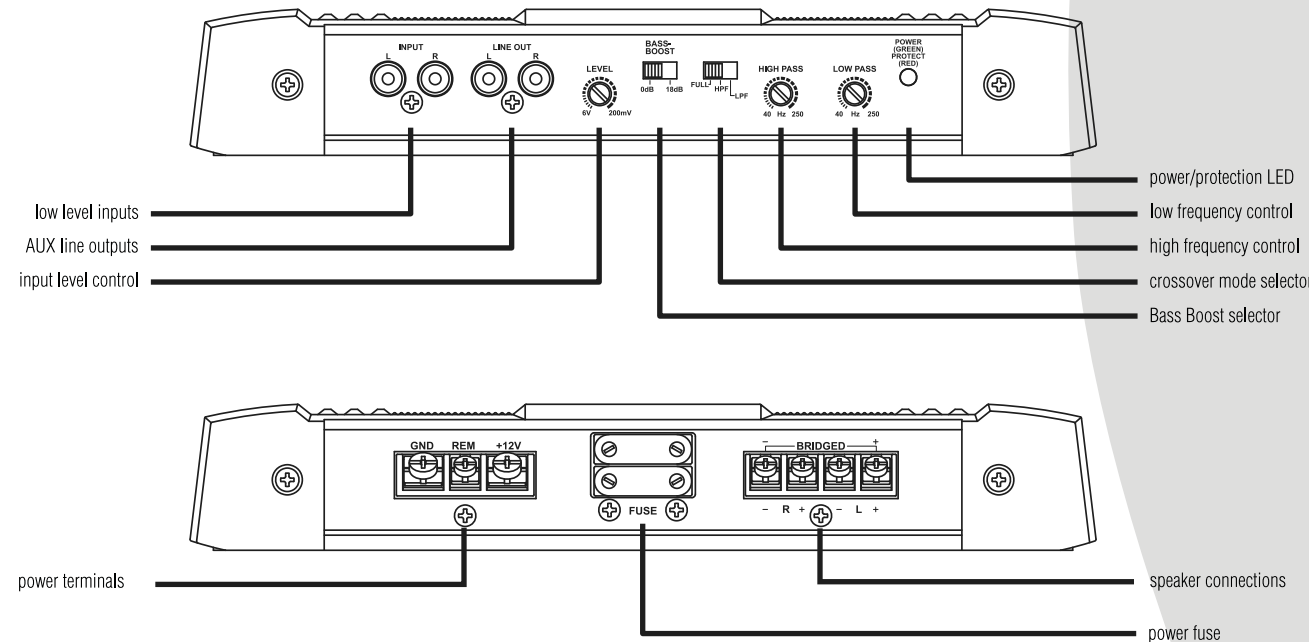
2 ch amp MXA214 • MXA224 • MXA234

- crossover mode selector** When used with normal, full range system, set this switch to "FULL". If you wish to use the internal crossover to power a driver or specific frequency range, use the "LPF" or "HPF" FOR the "LOWPASS" OR "HIGHPASS" settings.
- input level controls** Enables the matching of input levels to the output levels from head unit (or other signal source). The input sensitivity of adjustment ranges from 6V to 200mV.
- crossover frequency control** When crossover mode selector is in HIGHPASS mode, this control sets the lower frequency limit for audio program sent to the speakers. When crossover mode selector is in LOWPASS mode, this control sets the upper frequency limit for audio program sent to the speakers. The crossover is continuously variable adjustment from 40 to 250 Hz.
- bass boost selector** This selector switch permits the bass level an increase of 18dB.
- low level input** This amp features RCA type jacks for high impedance input. Use these with car stereo output which uses RCA type connector cables.
- high level input** If your car stereo jacks are not RCA type output, use the high-low level input adaptor to connect the speaker output leads of car stereo and the RCA input jacks of amp.
- AUX line outputs** This amp features RCA jacks for AUX line outputs. Use these for unlimited system expansion to the next MAX.
- power LED** This indicator is illuminated in GREEN when power is applied.
- protection LED** This indicator is illuminated in RED when the built-in protection circuitry is activated.
- power fuse** The fuse protects the amplifier and your car's electrical system from short circuit conditions.
- power terminals** Use these connectors to deliver power, ground, and remote turn-on control to the amplifier.
- speaker connectors** These terminals are to guarantee high conductivity and minimum signal loss.

	MXA214	MXA224	MXA234
output power @ 14.4v DC, 1KHz			
RMS Power @ 4 Ohms	35 Watts x 2	50 Watts x 2	100 Watts x 2
THD @ 4 Ohms	50 Watts x 2	75 Watts x 2	150 Watts x 2
RMS Power @ 2 Ohms	50 Watts x 2	75 Watts x 2	150 Watts x 2
THD @ 2 Ohms	75 Watts x 2	100 Watts x 2	200 Watts x 2
Maximum Power Output	400 Watts x 2	500 Watts x 2	1000 Watts x 2
Bridged Power at 4 Output	800 Watts x 1	1000 Watts x 1	2000 Watts x 1
frequency response		15 Hz-30 KHz	
input impedance		10K Ohms	
low level inputs			
input sensitivity		200mV-6V Adjustable	
S/N ration		>95dB	
channel separation		>65dB	
crossover filters			
low Pass		40 Hz-250 Hz	
high Pass		40 Hz-250 Hz	
bass boost		0 / +18dB	
matching speaker impedance			
stereo mode		2-4 Ohms	
bridged mode		4-8 Ohms	
maximum current draw	20A	20A	30A
power supply voltage	14.4V DC Neg. Ground (10.5-16V)		
dimensions (W x H x L)			
mm	270 x 43.5 x 190	270 x 43.5x 228	270 x 43.5x 305
inches	10.63 x 1.71 x 7.5	10.63 x 1.71 x 9	10.63 x 1.71 x 12

features and controls

2 ch amp MXA214 • MXA224 • MXA234



features and specifications

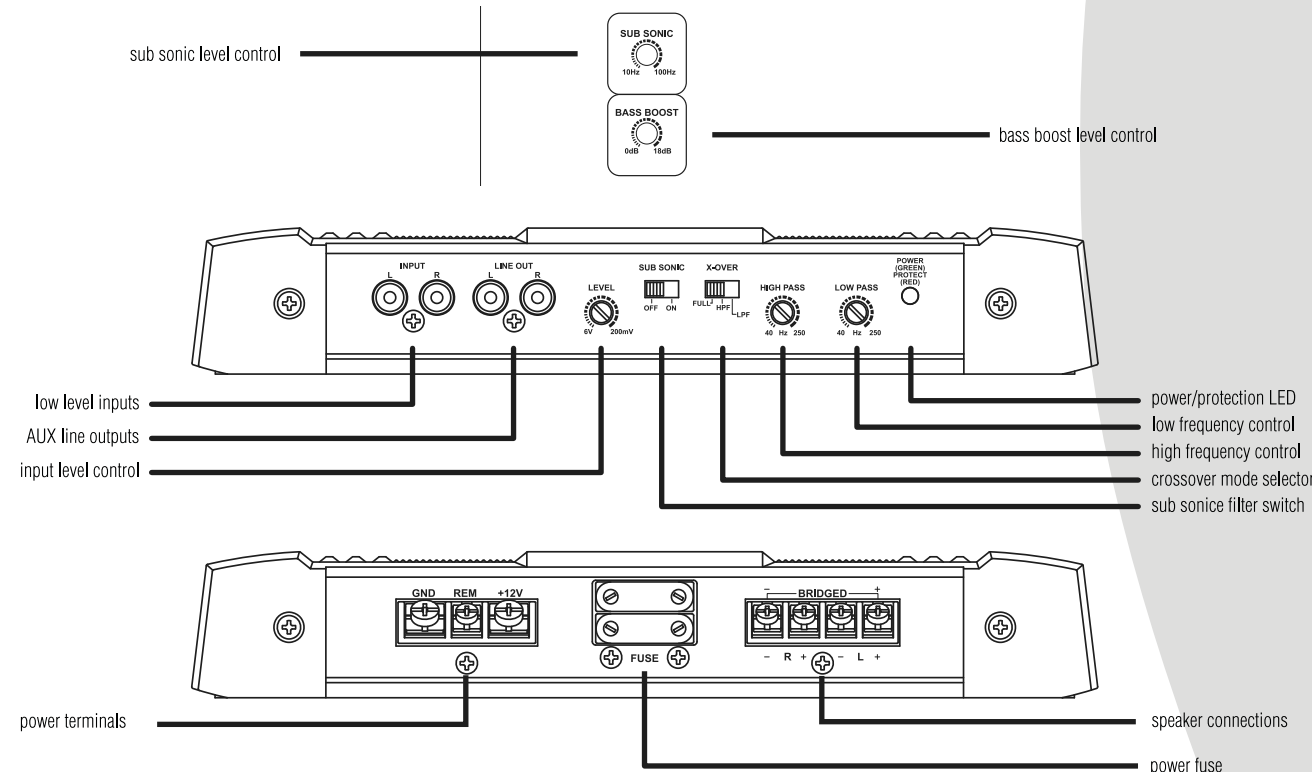
2 ch amp MXA244 • MXA254 • MXA284

- crossover mode selector** When used with normal, full range system, set this switch to "FULL". If you wish to use the internal crossover to power a driver or specific frequency range, use the "LPF" or "HPF" FOR the "LOWPASS" OR "HIGHPASS" settings.
- input level controls** Enables the matching of input levels to the output levels from head unit (or other signal source). The input sensitivity of adjustment ranges from 6V to 200mV.
- crossover frequency control** When crossover mode selector is in HIGHPASS mode, this control sets the lower frequency limit for audio program sent to the speakers. When crossover mode selector is in LOWPASS mode, this control sets the upper frequency limit for audio program sent to the speakers. The crossover is continuously variable adjustment from 40 to 250 Hz.
- sub sonic filter switch** This selector switch permits the bass level an increase of 18dB.
- bass boost level control** This control permits adjustment of the bass level up to an increase of approximately up to 18dB.
- sub sonic control** When the sub sonic selector switch is in "ON" mode, this filter control permits continuously variable adjustment from 10 to 100Hz.
- low level input** This amp features RCA type jacks for high impedance input. Use these with car stereo output which uses RCA type connector cables.
- high level input** If your car stereo jacks are not RCA type output, use the high-low level input adaptor to connect the speaker output leads of car stereo and the RCA input jacks of amp.
- AUX line outputs** This amp features RCA jacks for AUX line outputs. Use these for unlimited system expansion to the next MAX.
- power LED** This indicator is illuminated in GREEN when power is applied.
- protection LED** This indicator is illuminated in RED when the built-in protection circuitry is activated.
- power fuse** The fuse protects the amplifier and your car's electrical system from short circuit conditions.
- power terminals** Use these connectors to deliver power, ground, and remote turn-on control to the amplifier.
- speaker connectors** These terminals are to guarantee high conductivity and minimum signal loss.

output power @ 14.4v DC, 1KHz	MXA244	MXA254	MXA284
RMS Power @ 4 Ohms	150 Watts x 2	200 Watts x 2	300 Watts x 2
THD @ 4 Ohms	250 Watts x 2	300 Watts x 2	450 Watts x 2
RMS Power @ 2 Ohms	250 Watts x 2	300 Watts x 2	450 Watts x 2
THD @ 2 Ohms	300 Watts x 2	400 Watts x 2	650 Watts x 2
Maximum Power Output	1500 Watts x 2	2000 Watts x 2	2500 Watts x 2
bridged Power at 4 Output	3000 Watts x 1	4000 Watts x 1	5000 Watts x 1
frequency response	15 Hz-30 KHz		
input impedance	10K Ohms		
low level inputs	10K Ohms		
input sensitivity	200mV-6V Adjustable		
low level inputs	200mV-6V Adjustable		
S/N ration	>95dB		
channel separation	>65dB		
crossover filters			
low Pass	40 Hz-250 Hz		
high Pass	40 Hz-250 Hz		
bass boost	0 ~ +18dB		
sub sonic filter	10-100Hz		
matching speaker impedance			
stereo mode	2-4 Ohms		
bridged mode	4-8 Ohms		
maximum current draw	40A	50A	70A
power supply voltage	14.4V DC Neg. Ground (10.5-16V)		
dimensions (W x H x L)			
mm	270 x 43.5 x 381	270 x 43.5 x 432	270 x 43.5 x 482
inches	10.63 x 1.71 x 15	10.63 x 1.71 x 17	10.63 x 1.71 x 19

features and controls

2 ch amp MXA244 • MXA254 • MXA284



features and specifications

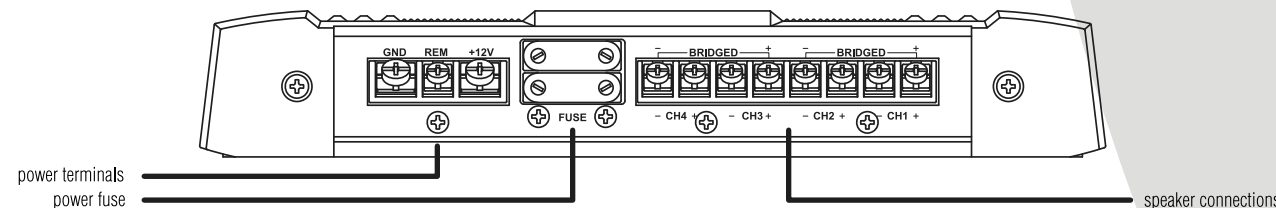
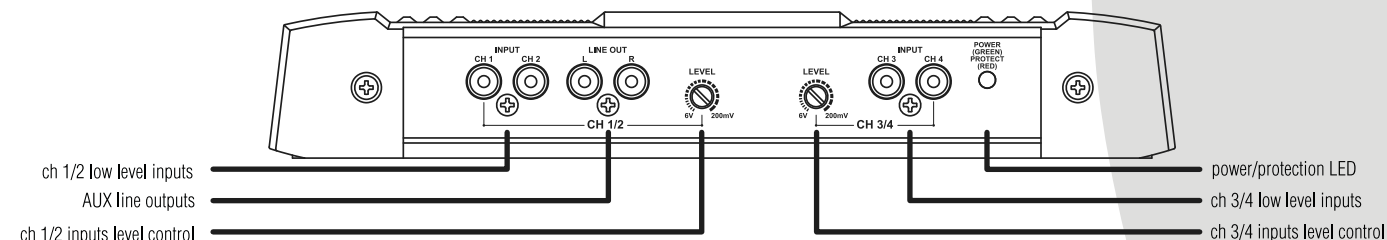
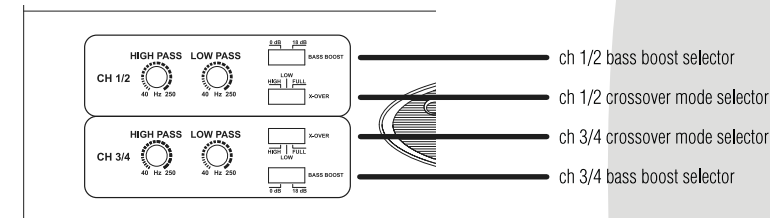
4 ch amp MXA414

- crossover mode selector** When used with normal, full range system, set this switch to "FULL". If you wish to use the internal crossover to power a driver or specific frequency range, use the "LPF" or "HPF" FOR the "LOWPASS" OR HIGHPASS" settings.
- input level controls** Enables the matching of input levels to the output levels from head unit (or other signal source). The input sensitivity of adjustment ranges from 6V to 200mV.
- crossover frequency control** When crossover mode selector is in HIGHPASS mode, this control sets the lower frequency limit for audio program sent to the speakers. When crossover mode selector is in LOWPASS mode, this control sets the upper frequency limit for audio program sent to the speakers. The crossover is continuously variable adjustment from 40 to 250 Hz.
- bass boost selector** This selector switch permits the bass level an increase of 18dB.
- low level input** This amp features RCA type jacks for high impedance input. Use these with car stereo output which uses RCA type connector cables.
- high level input** If your car stereo jacks are not RCA type output, the high-low level input adaptor to connect the speaker output leads of car stereo and the RCA input jacks of amp.
- AUX line outputs** This amp features RCA jacks for AUX line outputs. Use these outputs. Use these for unlimited system expansion to the next MAX.
- power LED** This indicator is illuminated in GREEN when power is applied.
- protection LED** This indicator is illuminated in RED when the built-in protection circuitry is activated.
- power fuse** The fuse protects the amplifier and your car's electrical system from short circuit conditions.
- power terminals** Use these connectors to deliver power, ground, and remote turn-on control to the amplifier.
- speaker connectors** These terminals are to guarantee high conductivity and minimum signal loss.

output power @ 14.4v DC, 1KHz	MXA414
RMS Power @ 4 Ohms	50 Watts x 4
THD @ 4 Ohms	75 Watts x 4
RMS Power @ 2 Ohms	75 Watts x 4
THD @ 2 Ohms	100 Watts x 4
Maximum Power Output	500 Watts x 4
bridged Power at 4 Output	1000 Watts x 2
frequency response	15 Hz-30 KHz
input impedance	
low level inputs	10K Ohms
input sensitivity	
low level inputs	200mV-6V Adjustable
S/N ration	>95dB
channel separation	>65dB
crossover filters	
low Pass	40 Hz-250 Hz
high Pass	40 Hz-250 Hz
bass boost	0 / +18dB
matching speaker impedance	
stereo mode	2-4 Ohms
bridged mode	4-8 Ohms
maximum current draw	30A
power supply voltage	14.4V DC Neg. Ground (10.5-16V)
dimensions (W x H x L)	
mm	270 x 43.5 x 340
inches	10.63 x 1.71 x 13.4

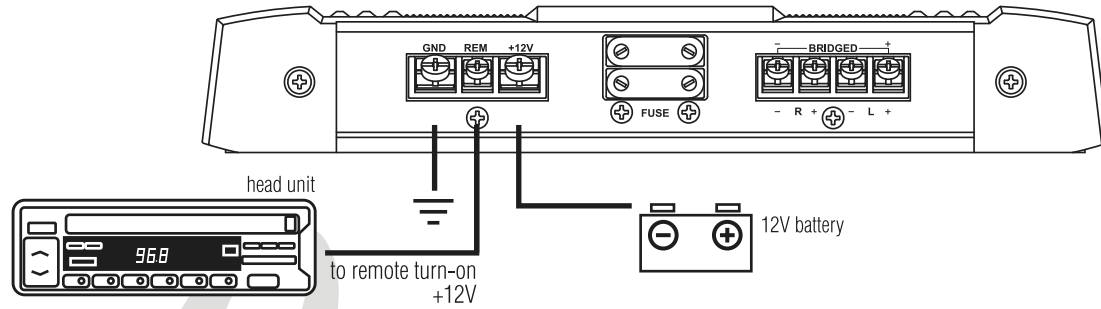
features and controls

4 ch amp MXA414

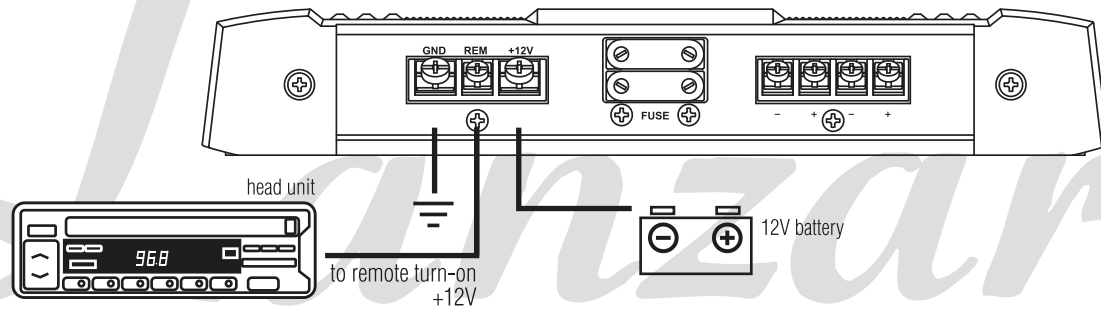


electrical connections

2 ch amp MXA214 • MXA224
MXA234 • MXA244
MXA254 • MXA284

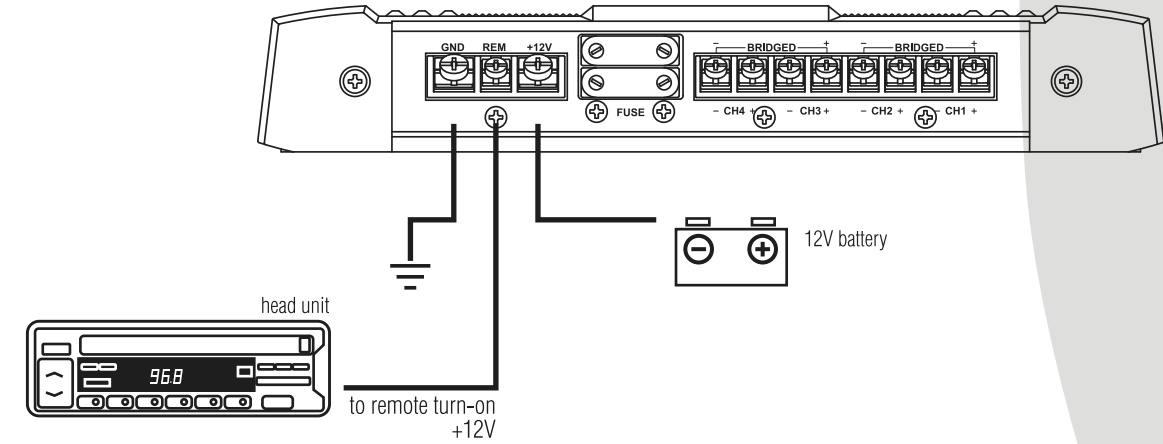


Mono block amp MXA1600 • MXA3000D



electrical connections

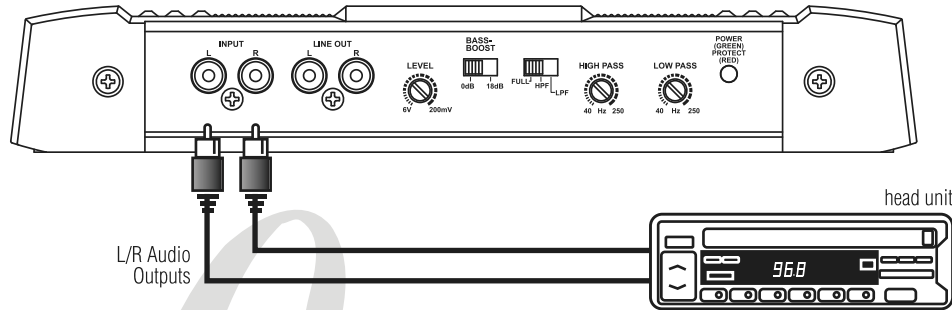
4 ch amp MXA414



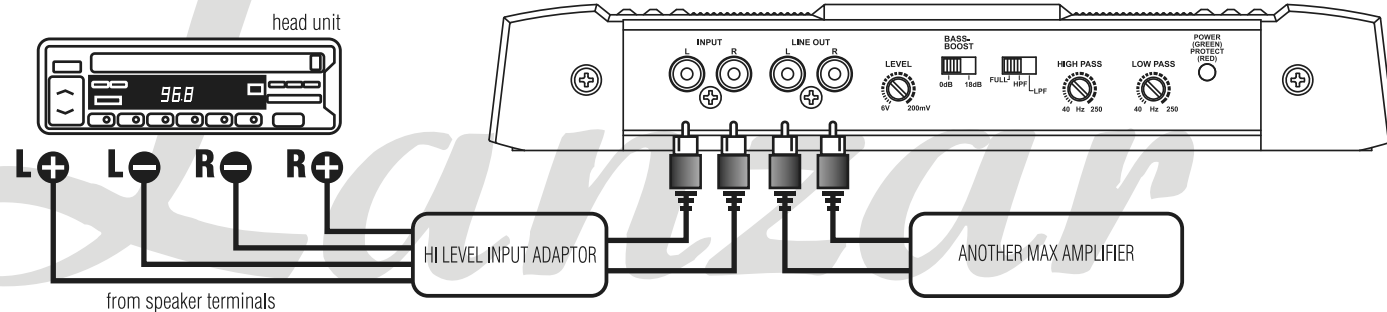
stereo input connections

2 ch amp MXA214 • MXA224 • MXA234

using low level inputs



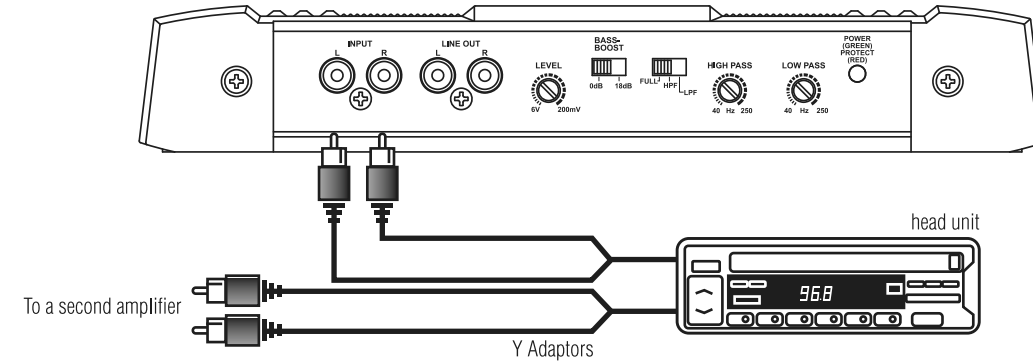
using high level inputs



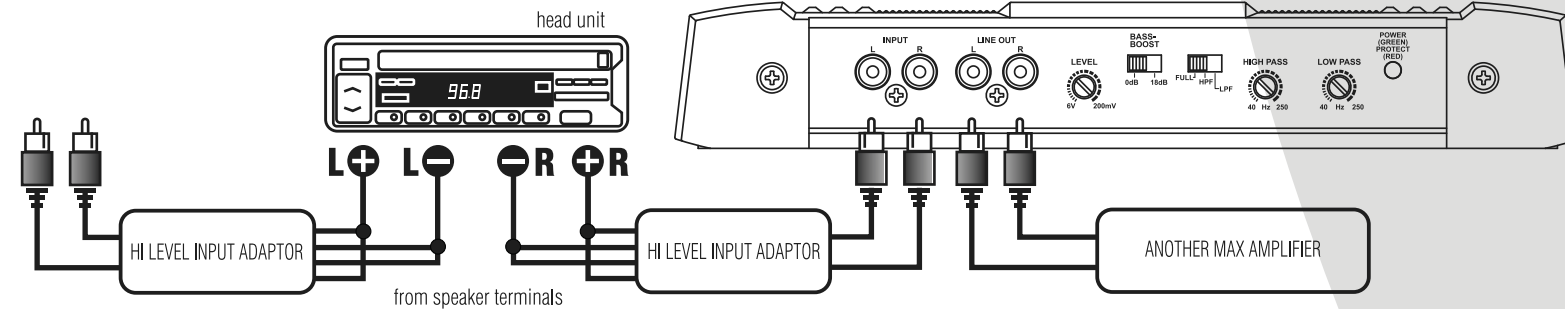
mono input connections

2 ch amp MXA214 • MXA224 • MXA234

using low level inputs



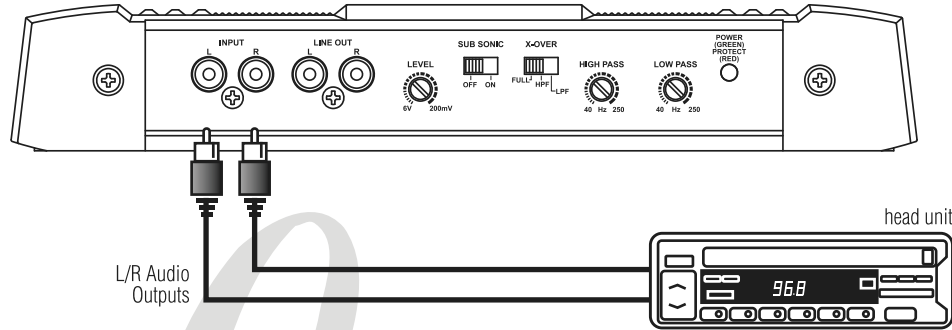
using high level inputs



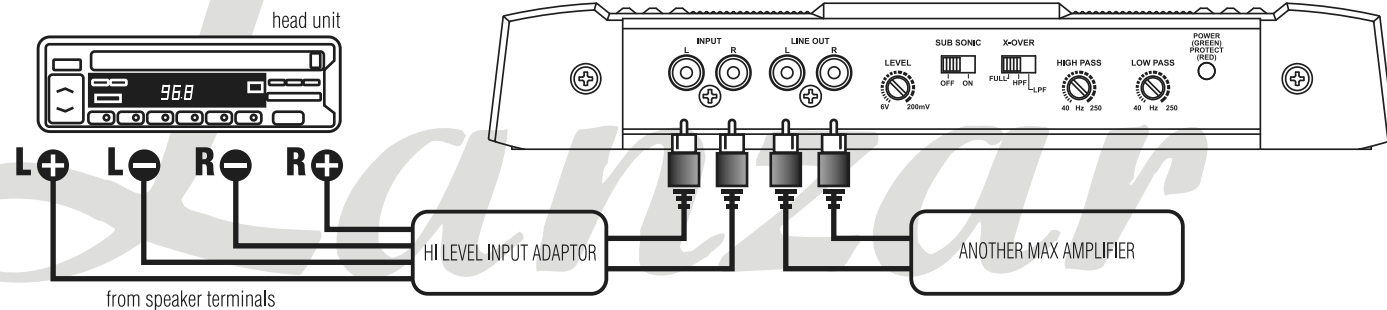
stereo input connections

2 ch amp MXA244 • MXA254 • MXA284

using low level inputs



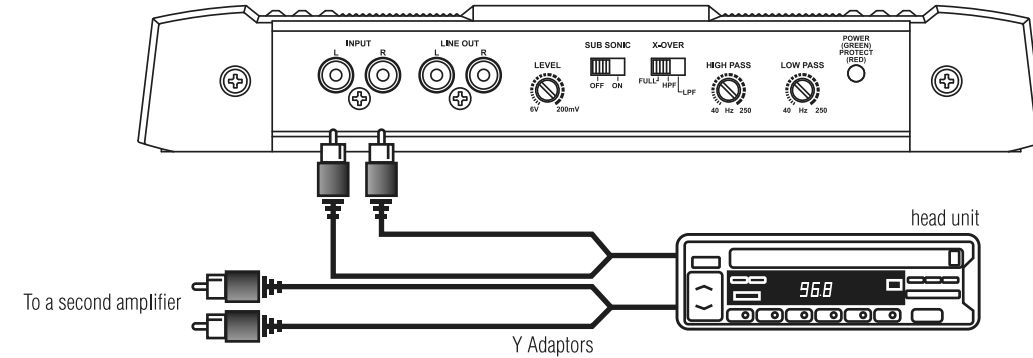
using high level inputs



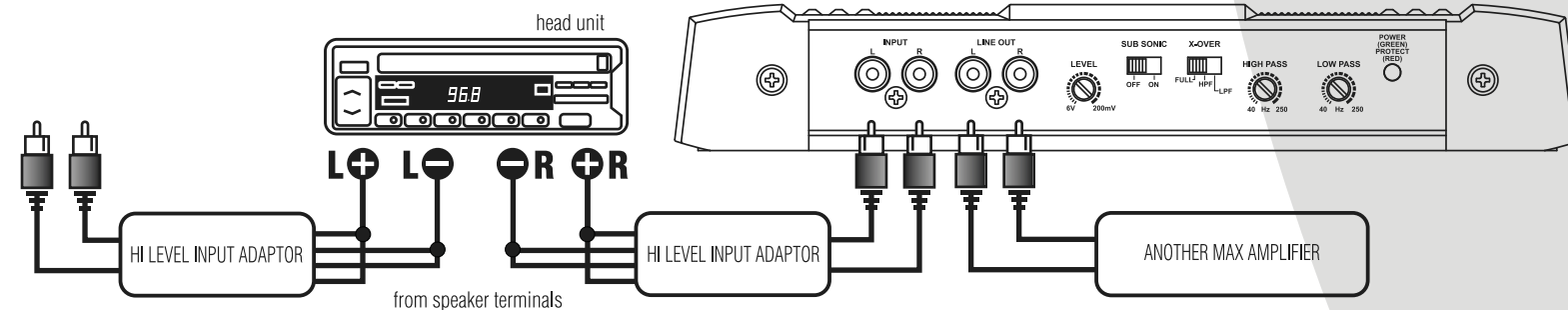
mono input connections

2 ch amp MXA244 • MXA254 • MXA284

using low level inputs



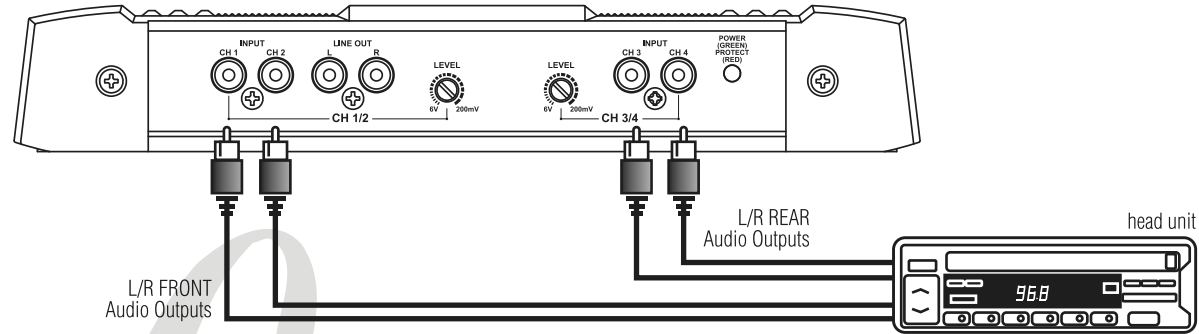
using high level inputs



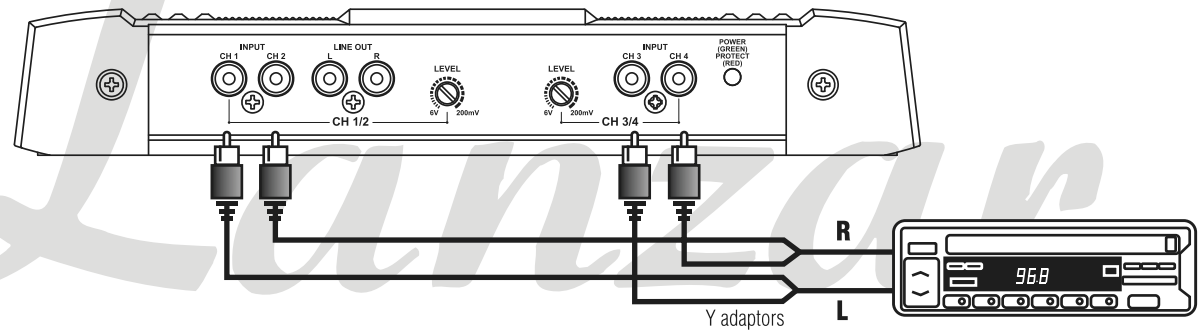
2/4 channel input connections

4 ch amp MXA414

4 CH input connections using low level inputs



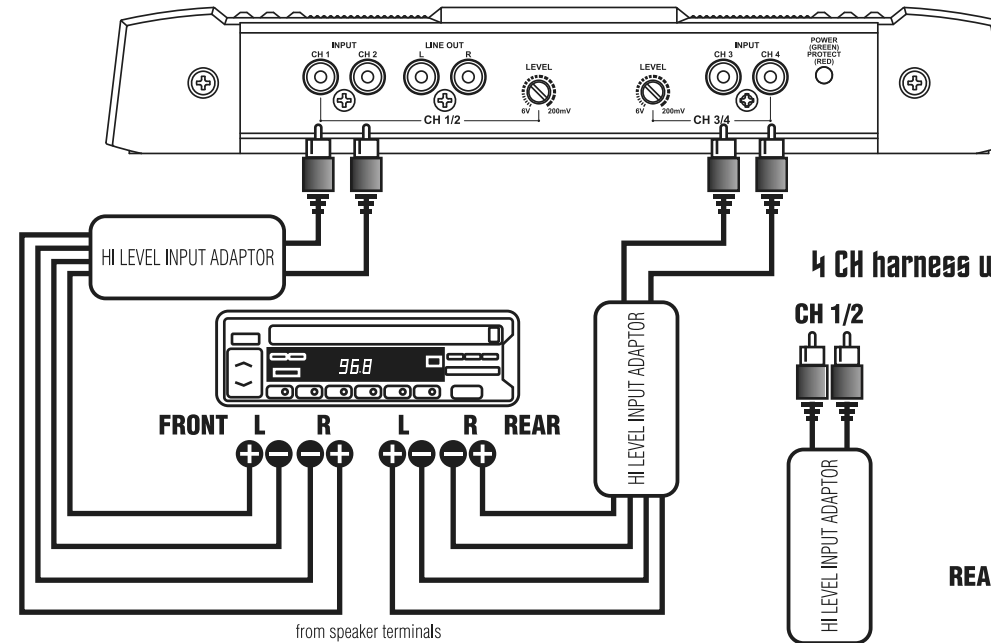
2 CH input connections using low level inputs



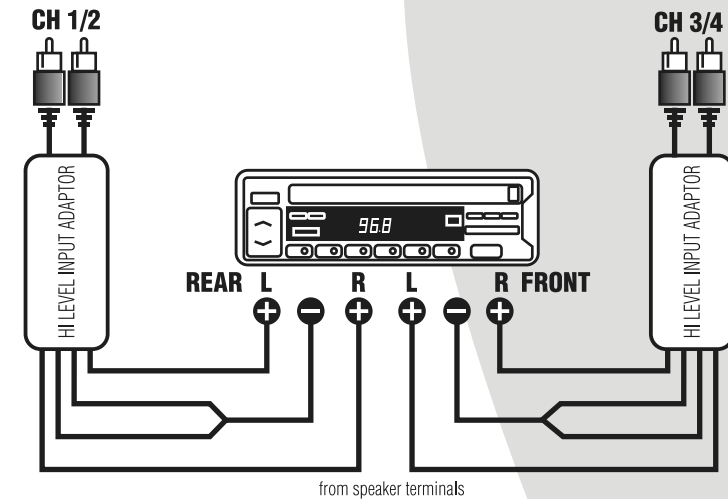
high level input connections

4 ch amp MXA414

4 CH Floating ground connections



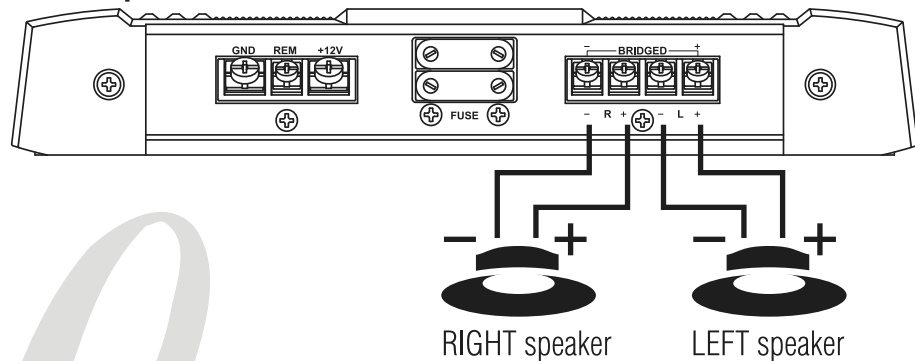
4 CH harness wiring for common ground connections



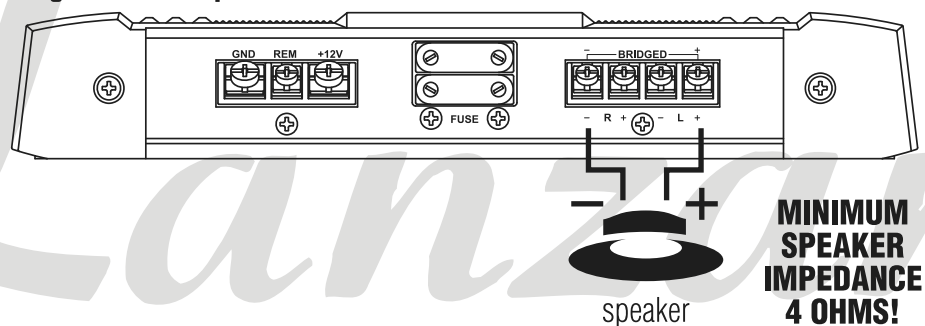
speaker connections

2 ch amp MXA214 • MXA224 • MXA234
 MXA244 • MXA254 • MXA284

Stereo Output Mode



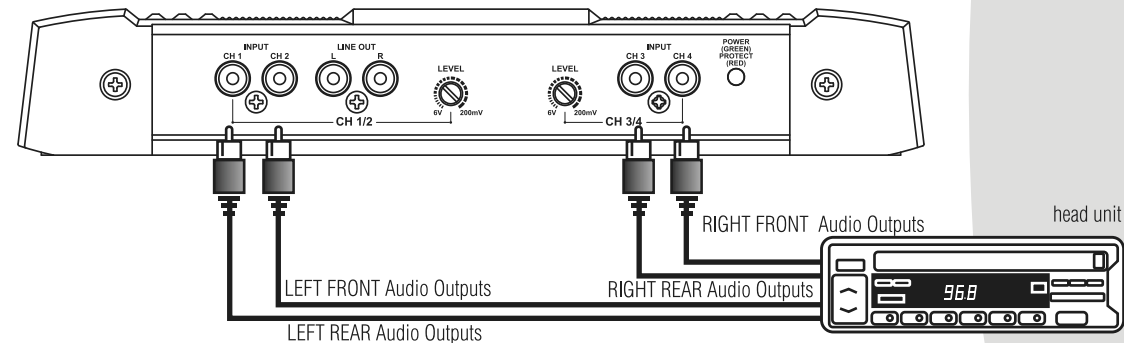
Bridged Mono Output Mode



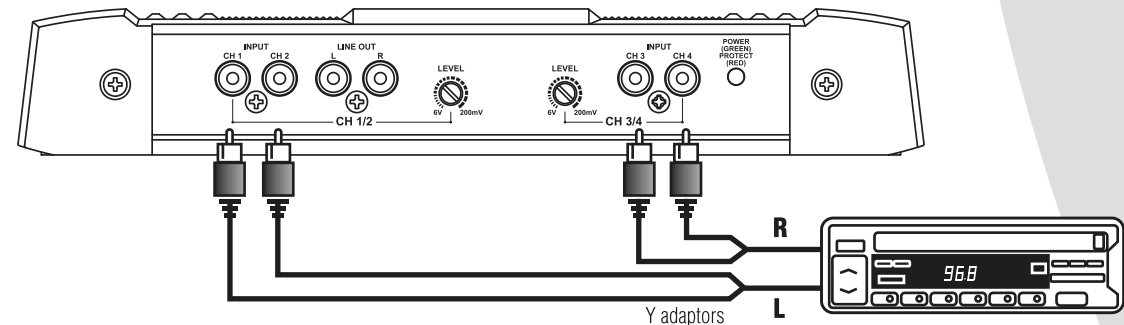
mono input connections

4 ch amp MXA414

4 CH mono input connections using low level inputs



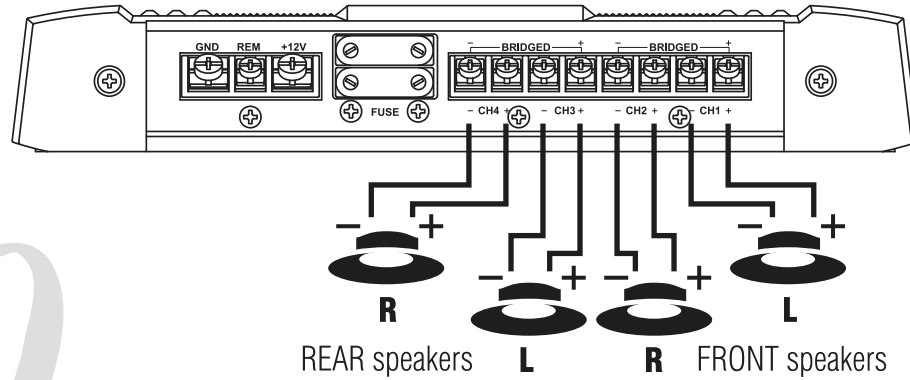
2 CH mono input connections using low level inputs



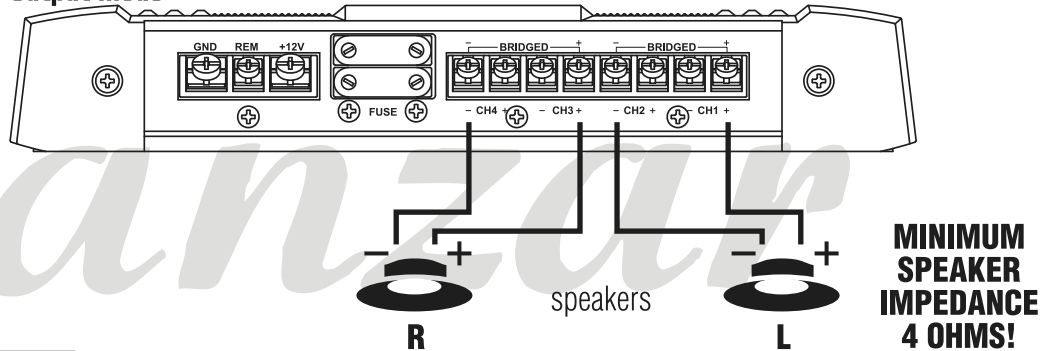
speaker connections

4 ch amp MXA414

4 CH Output Mode



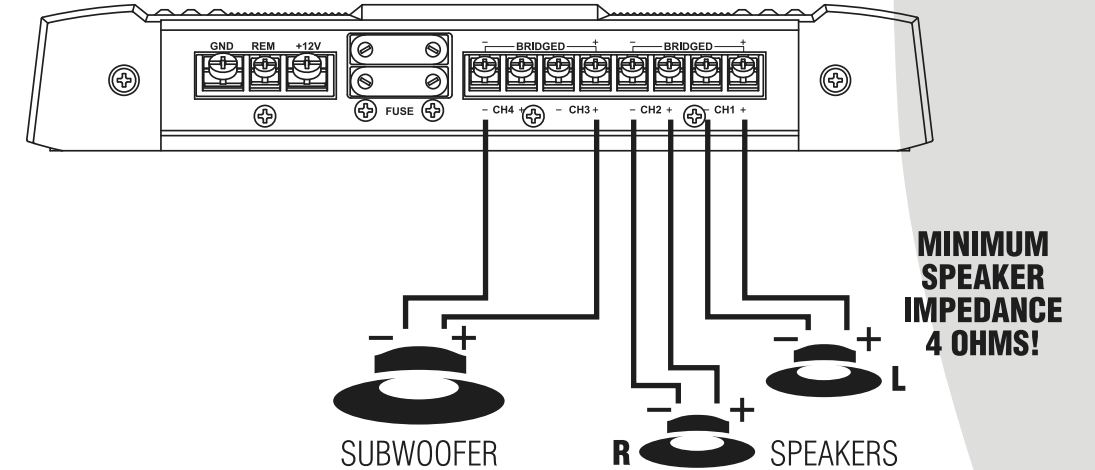
Bridged Dual Mono Output Mode



speaker connections

4 ch amp MXA414

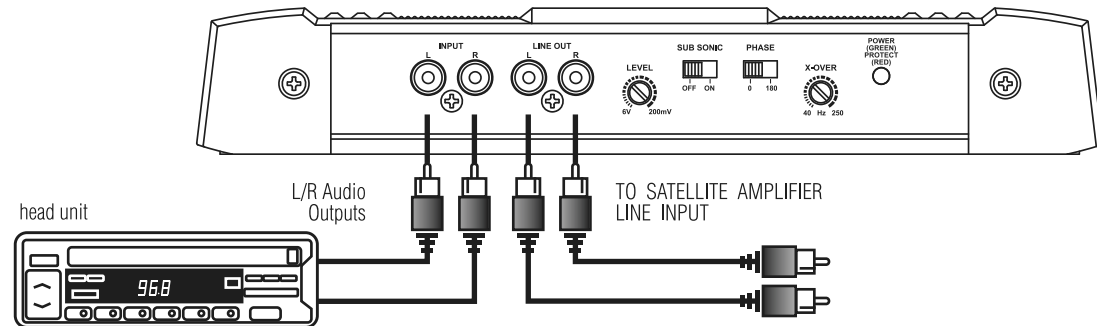
2 CH Stereo Output Mode with Mono Bridged Subwoofer Output



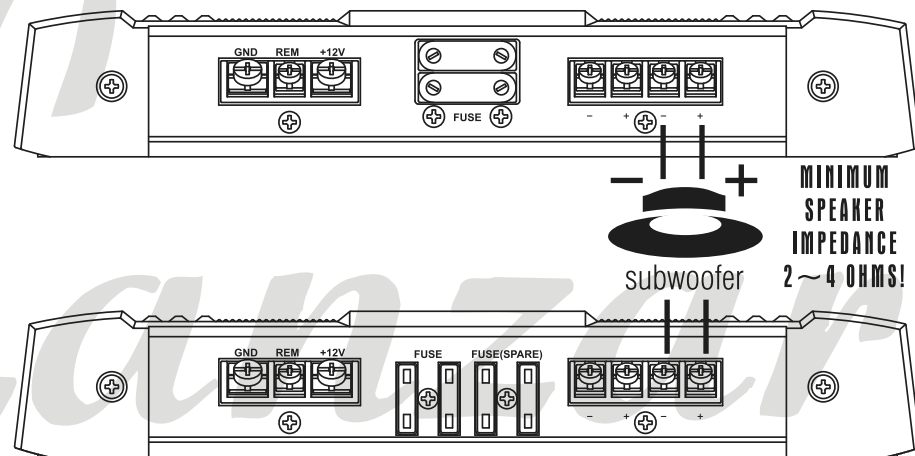
**MINIMUM
SPEAKER
IMPEDANCE
4 OHMS!**

system wiring

MONO BLOCK AMPLIFIER MXA1600 • MXA3000D



SPEAKER OUTPUT CONNECTION



mounting and installation

mounting

Your new Lanza MAX Series amplifier comes complete with all required mounting hardware. When determining a suitable location in your vehicle for the amp, please remember that it is a high-power electronic device capable of generating high heat.

For this reason, **always choose a location in your vehicle which has low vibration, adequate ventilation, a minimum of dust, and no moisture.** Be sure to mount the amp in such a manner as to allow reasonable airflow over the cooling fins.

Mark the location for the mounting screw holes by positioning the amp where you wish to install it and use a scribe (or one of the mounting screws) inserted in each of the mounting holes to mark the mounting surface. If the mounting surface is carpeted, measure the hole centers and mark with a felt tip pen.

Before attempting to drill the mounting holes, take note of any wires, lines or other devices in your vehicle which may be located behind the mounting surface! Then drill pilot holes in the mounting surface for the mounting screws and insert them. Tighten the screws securely.

wiring tips

When making electrical connections to your amplifier, please observe the following:

Use at least 8 gauge wire for power and ground connections.

Wire the amplifier directly to the car battery.

For the ground connection, use the shortest possible wire to a good chassis ground point.

Wire the Remote connection to the auto start lead of your head unit, equalizer or power antenna.

fuses

About power fuses:

Lanza MAX Series amplifiers feature built-in fuse systems. These fuses protect both the amplifier and the electrical system in your vehicle from fault conditions. If you ever need to replace the fuse in your Lanza MAX Series amp, use a fuse of exactly the same type and rating. A different type or rating of fuse may result in damage or fire.

protection circuitry

The built-in protection circuitry in the Lanza MAX Series amplifiers will disable the amplifier if it senses an input overload, a speaker short circuit, or extreme temperature conditions.

When the protection circuit is activated by any of these conditions, the Protection LED will be illuminated.

If this occurs, carefully inspect the system to determine the source of the problem.

- If the shutdown was a result of a thermal overload condition, allow the amplifier to cool down before attempting to restart it.
- If the shutdown was a result of an input overload, or speaker short circuit, be sure to correct the condition before restarting.

The amplifier can be restarted by turning the remote power OFF and then ON again.

No output.

Confirm that all terminal strip connections are secure and tight.

Check both in-line and built-in fuses. Both the +12V and the Remote terminals must have +12v referenced to chassis ground.

Confirm that the audio signal source (car radio, equalizer, etc.) is connected and is supplying output signal. To check if the amp is supplying signal, unplug the cables from the signal source (but leave them plugged into the amp). Briefly tap the center pin of each of the disconnected RCA plugs with your finger. This should produce a noise (feedback) in your speakers.

Only one channel works.

Confirm that all terminal strip connections are secure and tight.

Check the Balance control on the head unit (or other source) to verify that it is set to its midpoint.

If you are using the Low Level RCA input, reverse the input plugs at the amplifier (i.e., switch the L with the R). If the channels which is silent switches to the other side, the problem is either in the head unit/other source or the connecting cables.

Weak output.

Readjust the Input Level Control(s) to better suit the input signal.

Noise in the audio.

If the noise is a "whine" whose pitch follows the engine speed, confirm that the amplifier and any other signal sources (head unit, etc.) are properly grounded.

If the noise is a "clicking" or "popping" noise whose rate follows the engine speed, this usually means that the vehicle is equipped with resistor spark plugs and wires, or that the ignition is in need of service.

Check the routing of the speaker and input wires to make sure they are not adjacent to wires which interconnect lights and other accessories.

If the above steps fail to improve or clear noise interference, the system should be checked by a professional mobile audio installer.

precautions

Do not operate the amplifier when it is unmounted. Attach all audio system components securely within the automobile to prevent damage, especially in an accident.

Do not mount this amplifier so that the wire connections are unprotected, or in a pinched condition, or likely to be damaged by nearby objects.

Before making or breaking power connections in your system, disconnect the vehicle battery. Confirm that your head unit or other equipment is turned off while connecting the input jacks and speaker terminals.

If you need to replace the power fuse, do so only with a fuse identical to that supplied with the amplifier. Using a fuse of a different type or rating may result in damage that isn't covered in the manufacturer's warranty.

